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earnestly solicited.

Respectfully submitted,  
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A handwritten signature in cursive script, reading "Jay H. Maioli".

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JHM/AVF/pmc

VERSION WITH MARKINGS TO SHOW CHANGES MADEIN THE ABSTRACT OF THE DISCLOSURE

The Abstract of the Disclosure has been amended as follows:

--[Disclosed herein are] A decoding apparatus, decoding method, data-receiving apparatus, and a data-receiving method[. In a decoding apparatus] for [carrying out] performing a maximum-likelihood decoding process based on a Viterbi algorithm on a data train completing a convolution-encoding process[, the decoding]\_. The apparatus includes a computation [means] device for [carrying out] performing a trellis computation for decoding a data train completing the convolution-encoding process. The decoding apparatus further includes a control [means] device for controlling the trellis computation [so as] to be carried out by the computation [means] device with processing timings in processing units each corresponding to a process carried out on n bits of pre-encoding data, in which each of the processing units is parallel processing carried out on computation results obtained for  $2^n$  states with one of the processing timings[, which] immediately [precedes] preceding a present one of the processing timings[, ] to find the computation results with the present processing timing for the  $2^n$  states.--

IN THE CLAIMS

Claims 1-8 have been amended as follows:

--1. (Amended) A decoding apparatus for [carrying out] performing a maximum-likelihood decoding process based on a Viterbi algorithm on a data train completing a convolution-encoding process, said decoding apparatus comprising:

computation means for [carrying out] performing a trellis computation for decoding [a] said data train completing said convolution-encoding process; and

control means for controlling said trellis computation [so as] to be [carried out] performed by said computation means with a plurality of processing timings in a plurality of processing units each corresponding to a process [carried out] performed on  $n$  bits of pre-encoding data, wherein each of said plurality of processing units is parallel processing [carried out] performed on a plurality of computation results obtained for  $2^n$  states with one of said plurality of processing timings[, which] immediately [precedes] preceding a present [one] timing of said plurality of processing timings[,] to [find] obtain computation results with said present processing timing for said  $2^n$  states.

--2. (Amended) [A] The decoding apparatus according to claim 1, [said decoding apparatus] further [having] comprising a memory for storing said computation results obtained with said immediately preceding processing timing and said present

processing timing, wherein[,] during each of said processing units[,] said computation results obtained for said  $2^n$  states with said immediately preceding processing timing are read [out] from a storage area of said memory and said computation results found with said present processing timing for said  $2^n$  states are stored [into the same] in said storage area.

--3. (Amended) A decoding method for [carrying out] performing a maximum-likelihood decoding process based on a Viterbi algorithm on a data train completing a convolution-encoding process, [wherein] comprising the step of performing a trellis computation for decoding [a] said data train completing said convolution-encoding process [is carried out] with a plurality of processing timings in a plurality of processing units each corresponding to a process carried out on n bits of pre-encoding data, [and] wherein each of said processing units is parallel processing [carried out] performed on a plurality of computation results obtained for  $2^n$  states with one of said plurality of processing timings[, which] immediately [precedes] preceding a present one of said processing timings[,] to find computation results with said present processing timing for said  $2^n$  states.

--4. (Amended) [A] The decoding method according to claim 3, wherein[,] in each of said plurality of processing units[,] each of said plurality of computation results obtained for said  $2^n$  states with said immediately preceding

processing timing are read [out] from a storage area of [said] a memory, and said computation results [found] obtained with said present processing timing for said  $2^n$  states are stored [into the same] in said storage area.

--5. (Amended) A data-receiving unit [comprising] having a decoding unit for carrying out a maximum-likelihood decoding process based on a Viterbi algorithm on a data train completing a convolution-encoding process [wherein], said decoding unit [comprises] comprising:

computation means for carrying out a trellis computation for decoding [a] said received data train completing said convolution-encoding process; and

control means [used] for controlling said trellis computation [so as] to be [carried out] performed by said computation means with a plurality of processing timings in a plurality of processing units each corresponding to a process carried out on n bits of pre-encoding data, wherein each of said plurality of processing units is parallel processing [carried out] performed on computation results obtained for  $2^n$  states with one of said plurality of processing timings, [which] immediately [precedes] preceding a present one of said plurality of processing timings[,] to [find] obtain a plurality of computation results with said present processing timing for said  $2^n$  states.

--6. (Amended) [A] The data-receiving unit according to

claim 5, [said data-receiving apparatus] further comprising a memory for storing said plurality of computation results obtained with said immediately preceding processing timing and said present processing timing, wherein[,] during each of said processing units[,] said plurality of computation results obtained for  $2^n$  states with said immediately preceding processing timing are read [out] from a storage area of said memory and said computation results found with said present processing timing for said  $2^n$  states are stored [into the same] said storage area.

--7. (Amended) A data-receiving method, comprising [a decoding] the step of [carrying out] performing maximum-likelihood decoding processing based on a Viterbi algorithm on a received data train completing a convolution-encoding process, wherein[,] in said decoding [process,] processing a trellis computation for decoding [a] said data train completing said convolution-encoding process is [carried out] performed with a plurality of processing timings in a plurality of processing units each corresponding to a process [carried out] performed on  $n$  bits of pre-encoding data, and each of said processing units is parallel processing carried out on a plurality of computation results obtained for  $2^n$  states with one of said plurality of processing timings[, which] immediately [precedes] preceding a present one of said plurality of processing timings[,] to find said plurality of computation results with said present processing timing for

said  $2^n$  states.

--8. (Amended) [A] The data-receiving method according to claim 7, wherein[,] in each of said plurality of processing units[,] said plurality of computation results obtained for said  $2^n$  states with said immediately preceding processing timing are read [out] from a storage area of [said] a memory[,] and said computation results found with said present processing timing for said  $2^n$  states are stored [into the same] in said storage area.--